

The birth of Antarctic Soil Microbiology in the Middle of the 19th century

Manfred Bölter¹ and Hans-Peter Blume²

¹ *Institute for Ecosystem Research, University Kiel, Olshausenstr 75, 24148 Kiel, Germany*

² *Institute for Plant Nutrition and Soil Science, University Kiel, Olshausenstraße 40, 24098 Kiel, Germany*

The German doctor and natural scientist Christian G. Ehrenberg (1795-1878) started soil scientific investigations by microscopic inspections of soils. He analysed and described different bacteria, algae, diatoms and protozoa from various regions of the world. Among those samples, he properly was the first analysing samples from Cockburn Island, Western Antarctic Peninsula (64.20° S, 56.85° W). From this place he described mosses, lichens and sea algae on a soil, strongly mixed with penguin excrements. His slides, prepared in Canada Balsam are still located in the Museum of Nature Science at the Humboldt University in Berlin. During the inspections he identified beside organisms recognizable minerals, litter residues with tissue structures, amorphous-looking humus, and clay particles and established theories on soil forming and weathering processes. Although this was criticized during his time, it is still fully accepted today. Therefore, Ehrenberg can be regarded as the main founder of soil microbiology and as pioneer in soil micro-morphology, even for Antarctica.